## Introduction

Based on what has been learned from the four project school districts as well as experience nationally in the Safe Routes to School movement, this chapter discusses the various means to increase the number of children in Maine who bicycle and walk to school. These means can be divided into four categories:

- **Engineering** - physical infrastructure improvements such as paved road shoulders, sidewalks, crosswalks and pedestrian signals, shared use paths, and design issues within the school campus;
- **Education** - educating motorists to be more aware of bicyclists and pedestrians as well as teaching children the age-appropriate skills regarding walking and bicycling safety.
- **Encouragement** - schools can create incentives for children to walk or bike-to school by holding special walking or bicycling days with prizes; "walking school buses" or "bike trains" are where one or more parents or other adults organize a group walking or biking from a specific neighborhood along a route to and from school
- **Enforcement** - includes better enforcement of speed limits and crosswalk laws in school zones as well as providing crossing guards where needed.

The following sections discuss each of these in more detail.

## Engineering

Engineering improvements fall within the categories of those specifically oriented toward bicyclists and walkers, those designed to slow motor vehicle traffic that makes bicycling and walking more comfortable, and physical improvements within the school campus.

**Bicycle and Pedestrian Infrastructure** - In the survey parents indicated that two of the improvements most needed to change their attitude toward allowing their children to bicycle and walk to school were constructing bicycle/walking paths that were separated from traffic (27%) and constructing sidewalks (25%). From these statistics it is clear that parents want their children safely separated from traffic.

Providing sidewalks in urban/suburban/village areas that connect homes to schools is a basic requirement of a safe ways to school program. It is also imperative that municipalities do adequate winter sidewalk maintenance so walking can occur year-round. Parents should work through their school districts to encourage their local municipalities to prioritize new sidewalk construction for each school in the district and to allocate some reasonable funding from each year's budget to fund sidewalk construction.

In rural areas, it may be more difficult to justify the expenditure of sidewalks but paved shoulders significantly improve conditions for bicyclists and provide some measure of safety for pedestrians. There is often resistance due to funding and right of way constraints to pave rural shoulders but it is clear that children and many adults are reluctant to walk or bicycle on rural highways without them.

The strongest preference of parents was for a separated shared use path that could accommodate bicyclists and walkers. These paths can be costly and it is often difficult to find the public right of way to locate such a path. Still communities should be encouraged to explore where paths might be feasible particularly within

close proximity to schools. The new elementary school in Old Town, Maine will connect to the Orono bike path that will provide direct access from one residential neighborhood in Old Town to the new school. It will be worthwhile to see if there is an increase of bicycling and walking to school as a result of this path.

New sidewalks, paved shoulders, and shared use paths are all eligible for Transportation Enhancement funds available to each state through the Federal Highway Administration. Contact the Maine Dept. of Transportation for more information on this program. This funding is limited and competition is keen, however, and municipalities should be encouraged to not depend only on this source but to utilize their own local funds as well.

In addition to walking facilities, pedestrians often need to cross streets and highways. There is a need for well-marked crosswalks (with signs or flashing lights warning motorists if located in an area with poor sight distance) and at signalized intersections, pedestrian signals that function, are highly visible and provide enough time for young children to walk safely across the street. The picture below shows two boys trying to cross Rt. 90 in Warren without a crossing guard. An overhead


advance-warning sign with flashers is recommended for this crossing. Where there is considerable turning movement by motor vehicles, there should be an exclusive pedestrian phase that means all motor vehicle traffic is stopped to allow pedestrians to safely cross.

Finally, schools should provide on-site bicycle racks in a prominent location. Ideally, the racks should be weather protected and mounted on a permanent surface close to the school entrance. Schools should give bike racks and sidewalks the same deference as the parking zones.

**Traffic Calming -** Other than weather and distance, the greatest factor that discouraged parents from allowing their children to bicycle or walk to school was the speed of traffic. Thirty-five (35) percent of the parents of children in grades 3 to 5 who completed the survey said they would allow their children to walk or bicycle if "cars were slowed down". While speed limit enforcement may help somewhat, traffic moves fast because roads and streets are constructed to allow high speeds. Traffic engineers are usually reluctant to reduce speed limits below the speed at which 80% of the traffic travels. Therefore, the most effective means to reduce speed, particularly on rural roads and urban streets, such as Main St. in West Peru and the streets near Lincoln School in Augusta, is by various means of traffic calming. Traffic calming methods are physical changes in the street or road surface that require cars to go more slowly. Examples of these are speed tables, raised crosswalks, median islands, and narrowing travel lane width.

**School Campus Design and Siting -** The area of the school property can either give the message that bicyclists and walkers are welcome or that they are unexpected intruders into a motorized environment. One consideration is how to separate walkers and bicyclists traveling to school from school buses and parents dropping children off in motor vehicles. Two schools that have done this well are the Canal School in Westbrook that separates bus and motor vehicle drop offs and provides well-marked crosswalks for pedestrians. The Warren Elementary School provides a separate pathway leading to the school so children don't have to walk or bicycle on a road without shoulders and compete with motor vehicles turning into the school entrance. These paths should be at gentle grades with a good surface that can accommodate bicycles and is capable of being plowed in the winter.
The other consideration is to provide good bicycle storage in front of the school. Good bicycle racks are attractive and provide good security for bicycles locked to them. Two schools that do this well are Peru and Warren. Contact the Maine Dept. of Transportation for information on their program that provides grants for low-cost bicycle storage.

Providing sidewalks in urban areas connecting homes to schools is a basic requirement of a safe ways to school program. In rural areas paved and unpaved shoulders are commonly used by pedestrians. Crossing a busy city street or rural highway is often the most difficult impediment on a biking or walking route.

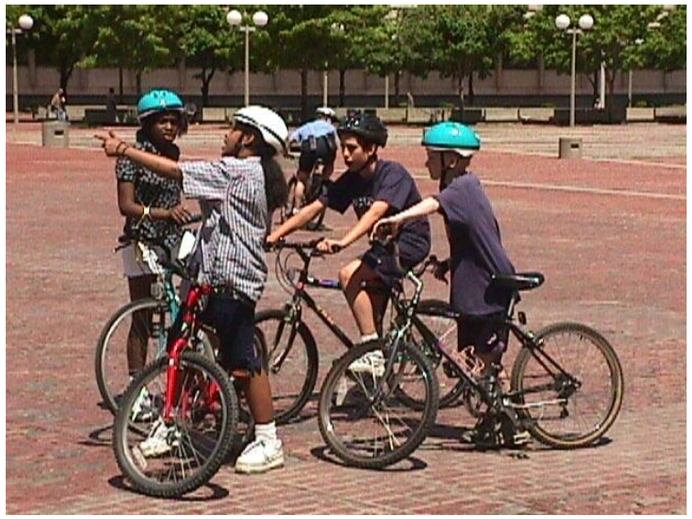
Finally, the school site location is critical to issues of waling and biking. Our case studies have shown that the lowest rates of biking/walking – and the least practical retrofits occur in regional schools located away from town centers on high traffic roadways. School site selection plays a critical and often permanent role in determining rates of walking and biking. In the case of elementary schools located away from residential districts on state highways, it is often impractical to consider retrofits that would permit younger children to safely walk or bike to school.

## Education

Education needs to be provided for both motorists and children. Motorists should be directed to slow down and watch for children especially on biking and walking routes to school and at critical road crossings. This education can occur by traditional methods such as flashing "School Zone 15 mph" signs. These signs cost between $3,000 and $5,000 and the cost must be born by the school district or municipality. Another method is motorist education through handouts distributed to parents or at places of motor vehicle registration. Appendix B provides a handout developed by the Bicycle Coalition of Maine, "Driving Around Walkers". Finally sometimes non-traditional means are needed such as a large banner to get motorists' attention. Westbrook residents recommended installing a banner like the one simulated below to make motorists slow down at this important crossing on Spring Street at Glenwood Avenue (route to Canal School).


**Three walking school buses were organized at the Lincoln School in Augusta and ran on Wednesday, October 30, 2002**

Children, as they grow older, can progressively learn the skills to bicycle and walk in traffic. Walking and bicycling education should be part of every school curriculum for every grade from K to 12. The Bicycle Coalition of Maine, through funding acquired by the Maine Department of Transportation, has provided free classroom presentations on bicycle safety for the last three years. These classes have been oriented toward fourth and fifth graders. For more information contact the Maine dept. of Transportation. See Appendix B for copies of "Walking Safety Tips" and "Be a Safe Bike Driver".



Efforts should also be made to encourage biking and carpooling for high school students. This may reduce demand for parking facilities and reduce school area congestion due to private vehicle use. The school districts should work with the Bicycle Coalition of Maine, the Department of Transportation and local cycling groups and shops to develop effective programs tailored to the local situation.

## Encouragement

The final phase of the Maine Safe Ways to School project was to develop programs in some of the project schools that would actively promote and encourage walking and bicycling to school and to see whether that promotion made a difference. The Bicycle Coalition of Maine was hired in September 2002 to begin this promotion. They began working with school administrators, parents, volunteers, and municipalities to encourage bicycling and walking to school. Listed below are the highlights for promotions in fall, 2002.

***Westbrook's Canal School*** **and** ***Saccarappa Elementary*** had a kickoff "Walk to School Day" on Oct. 17 with the participation of over 300 children. Saccarappa School (K-2) had 120 walkers and Canal School (3-5) had 176 walkers. This represents over half the students at both schools and the reports were that the school buses were practically empty. Some families are continuing to walk the established safe routes to school. The parent volunteers and Parent Teacher Association (PTA) plan to have another event in early spring with awards honoring children who walked through winter.

***Lincoln Elementary in Augusta*** also had a kickoff event on Oct. 30 with Walking School Buses on three established safe routes with nearly 75 kids parading through town with the BCM *Walking School Bus* signs and balloons (see photo). Lincoln Elementary administration and public safety are in close communication concerning barriers of walking to school, including relocating several crosswalks at the entrance of the school, considering an alternative walking entrance to the school grounds, and drafting a policy to reduce traffic to accommodate safe entrance to the school. An old ordinance prohibiting parking on one side of the school entrance has been reinstated. Principal Enga Stewart adds, "It's wonderful to encourage the neighborhood school aspect of walking to school. Parents are supportive of the walking school buses. We look forward to having it be a scheduled Walking Wednesday in the spring."

***MSAD 40*** - Plans are being developed for a Walk to School Day in Warren in April 2003 and at Waldoboro's Miller School in May. Waldoboro is also planning a "bike train" from the Rt. 32 area north of Rt. 1.

Even these limited results to date offer hope that encouragement does work and that parents and children do want to walk and bicycle to school. It does seem that encouragement is very important to reverse the momentum toward choices of motorized transportation to school. The "walking school bus" concept seems to be an idea that may be the only way to begin safe walking programs for children in the youngest grades and whenever challenging pedestrian crossings are encountered.

## Enforcement

The final component of a plan to increase walking and bicycling to school is enforcement. The surveys revealed a desire on the part of many parents, particularly those in the most rural areas such as Friendship and Peru for increased enforcement of speed limits. Again it is the speed of traffic that is the primary controllable factor that inhibits bicycling and walking to school. Greater enforcement is also needed for vehicles to slow down in school zones and to insure that vehicles stop for pedestrians in crosswalks.

Crossing guards are the final component of an enforcement program. It seems there are reports of increasing difficulty to find anyone to take the position of a crossing guard as in Warren. While there may be some locations where it is difficult to justify the expenditure of a crossing guard and trained adults leading a "walking school bus" can function as crossing guards in some instances, crossing guards perform valuable services and school districts and municipalities should work to continue crossing guards in key locations.

Crossing guard escorting Lincoln School student across Western Avenue in Augusta.


**Westbrook residents recommended installing a banner like the one simulated below to make motorists slow down at this important crossing on Spring Street at Glenwood Avenue (rote to Canal School)**